

## **Adaptive thermal comfort opportunities for dwellings**

### **Providing thermal comfort only when and where needed in dwellings in the Netherlands**

Alders, Noortje

**DOI**

[10.7480/abe.2016.13](https://doi.org/10.7480/abe.2016.13)

**Publication date**

2016

**Document Version**

Final published version

**Citation (APA)**

Alders, N. (2016). *Adaptive thermal comfort opportunities for dwellings: Providing thermal comfort only when and where needed in dwellings in the Netherlands*. [Dissertation (TU Delft), Delft University of Technology]. A+BE | Architecture and the Built Environment. <https://doi.org/10.7480/abe.2016.13>

**Important note**

To cite this publication, please use the final published version (if applicable).  
Please check the document version above.

**Copyright**

Other than for strictly personal use, it is not permitted to download, forward or distribute the text or part of it, without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license such as Creative Commons.

**Takedown policy**

Please contact us and provide details if you believe this document breaches copyrights.  
We will remove access to the work immediately and investigate your claim.

# Adaptive thermal comfort opportunities for dwellings

## Providing thermal comfort only when and where needed in dwellings in the Netherlands

- 1 In the Dutch residential sector there is no need for active cooling. (this thesis)
- 2 An Adaptive Thermal Comfort System at least has automated adaptive heating, automated adaptive solar shading and automated adaptive ventilation. (this thesis)
- 3 Efforts of energy saving in the past have led to vast overheating problems in the present but will not necessarily do so in the future. (this thesis)
- 4 High thermal mass is beneficial for an Adaptive Thermal Comfort System. (this thesis)
- 5 Tolerance can be indifference, while adaptivity involves empathy.
- 6 As long as fossil energy is as cheap as it is (2016), development of renewable energy will be lagging behind.
- 7 It is not the environment that makes us (un)comfortable, but the way we (can) deal with it. (Epicurus)
- 8 Finding 10,000 ways that do not work is not failure. (based on Thomas Edison)
- 9 Dancing is considered insane if you do not hear the music. (based on Friedrich Nietzsche)
- 10 Today you are you! That is truer than true! There is no one alive who is you-er than you! (Dr. Seuss)

These propositions are regarded as opposable and defensible, and have been approved as such by the promotor, prof. dr. ir. A.A.J.F. van den Dobbelaer.

# Adaptive thermal comfort opportunities for dwellings

## Providing thermal comfort only when and where needed in dwellings in the Netherlands

- 1 In de woningbouw in Nederland is er geen noodzaak voor actieve koeling. (dit proefschrift)
- 2 Een Adaptief Thermisch Comfort Systeem heeft tenminste automatische adaptieve verwarming, automatische adaptieve zonwering en automatische adaptieve ventilatie. (dit proefschrift)
- 3 Pogingen in het verleden om energie te besparen hebben geleid tot ernstige oververhitting in woningen in het heden maar dit hoeft niet te gebeuren in de toekomst. (dit proefschrift)
- 4 Hoge thermische massa is gunstig voor een Adaptief Thermisch Comfort Systeem. (dit proefschrift)
- 5 Tolerantie kan onverschilligheid zijn, maar voor adaptiviteit is empathie nodig.
- 6 Zo lang fossiele energie zo goedkoop is (2016), zal de ontwikkeling van duurzame energie achterblijven.
- 7 Het is niet de omgeving die ons (on)comfortabel maakt maar de manier waarop we ermee om (kunnen) gaan. (Epicurus)
- 8 10.000 manieren vinden die niet werken is geen falen. (based on T. Edison)
- 9 Dansen ziet er vreemd uit als je de muziek niet kan horen. (based on F. Nietzsche)
- 10 Vandaag ben jij jij! Dat is waarder dan waar! Er is niemand die jij-er is dan jij! (Dr. Seuss)

Deze stellingen worden opponeerbaar en verdedigbaar geacht en zijn als zodanig goedgekeurd door de promotor, prof. dr. ir. A.A.J.F. van den Dobbelsteen.